

F. HYDROLOGY AND WATER QUALITY

This section describes the existing hydrological setting for the project site, including runoff, drainage, and water quality, based on available information included with the application, City staff, published reports, and the hydrological analysis performed during preparation of the Midtown Milpitas Specific Plan EIR. In addition, a Baseline geologist conducted a reconnaissance of the site in August 2004 to verify drainage patterns and identify opportunity areas for construction of treatment control Best Management Practices (BMPs) to improve runoff water quality from the site. Based on information collected, this section identifies impacts that may result from project development, and suggests mitigation measures to reduce potential impacts.

1. Setting

A description of the existing conditions related to hydrology and storm drainage at the project site is provided below.

a. Climate. The climate of the project site area is characterized as dry-summer subtropical (often referred to as Mediterranean), with cool wet winters and relatively warm dry summers. The mean annual rainfall in the vicinity of the project site, for the period between 1948 and 2003, is approximately 14.5 inches, with the vast majority of rainfall between October and May.¹ Analysis of long-term precipitation records indicates that wetter and drier cycles lasting several years are common in the region. Severe, damaging rainstorms occur at a frequency of about once every three years.²

b. Runoff and Drainage. There are no creeks or streams crossing the project site, although two channelized creeks are located near the project site: Lower Penitencia Creek, which is located west of the project site, immediately west of and parallel to North Abel Street; and Ford Creek, which is located east of the project site, immediately east of and parallel to Railroad Avenue. The creeks are used for flood control, and form part of the City storm drainage system, which conveys stormwater to San Francisco Bay.

The site is relatively level and situated approximately 15 to 20 feet above mean sea level.³ The western portion of the project site, west of North Main Street, is largely undeveloped, with the exception of two former residences and outbuildings in the northwestern corner of the project site. The eastern portion of the project site, east of North Main Street, is completely developed and is almost entirely covered with impervious surfaces (building foundations, pavement, and compacted soil and gravel). A portion of the rainfall in the western part of the site would therefore be expected to be absorbed by site soils and percolate to groundwater, while in the eastern portion of the site most of the rainfall would encounter the impervious surfaces and flow overland into the City storm drain system. Several proposed improvements to the storm drainage system in the project vicinity were described in the Midtown Milpitas Specific Plan. These improvements included widening the Ford Creek channel, adding higher capacity outfalls and culverts at Railroad Avenue and Calaveras Boulevard, and con-

¹ Western Regional Climate Center, 2004, Website: <http://www.wrcc.dri.edu/summary/climsfo.html>.

² Brown, William M. III, 1988, *Historical Setting of the Storm: Perspectives on Population, Development, and Damaging Rainstorms in the San Francisco Bay Region*, in *Landslides, Floods, and Marine Effects of the Storm of January 3-5, 1982, in the San Francisco Bay Region, California*, Stephen D. Ellen and Gerald F. Wiczorek, Eds., U.S. Geological Survey Professional Paper 1434.

³ USGS, 1980, Milpitas Quadrangle, 7.5-minute topographic map.

structing additional storm drainage pipes at Abel Street. However, the primary capacity issues in the City storm drainage system are “upstream” of the project site; therefore, localized flooding would likely occur even if all the proposed project area improvements were implemented.⁴

All of the proposed project area improvements were described and ranked in the City’s Storm Drain Master Plan. All of the improvements described above were ranked as Priority 2 (necessary, but less urgent than Priority 1 improvements), except for the proposed improvement to Abel Street, which was rated as Priority 3 (optional). Work on these improvements had not been scheduled as of the date preparation of this Draft EIR.⁵

c. Flooding. Much of the project site is located within the 100-year flood hazard zone, as mapped by the Federal Emergency Management Agency (FEMA) and shown in Figure IV.F-1.⁶ Areas within the 100-year flood zone would be expected to be flooded, on average, once every one hundred years, but can flood more frequently. The remaining portions of the project site are located within the 500-year flood hazard zone, and would be expected to be flooded, on average, once every 500 years.

The City of Milpitas is a participant in the National Flood Insurance Program (NFIP), and therefore implements federal flood mitigation requirements established in the National Flood Insurance Act of 1986 and the Flood Disaster Protection Act of 1973. All new construction in a flood hazard area must meet minimum design standards to place occupied structures at least 1-foot above the 100-year flood elevation. These requirements have been incorporated into the City’s Building Code and are enforced for all new development within the City.

Flooding at the project site was analyzed in the Midtown Milpitas Specific Plan EIR. The flooding hazard primarily takes the form of ponding water and overflows of open drainage channels that result in shallow flooding (1 to 2 feet deep). During a 100-year flood, creeks east of the site would overtop banks and spill toward Lower Penitencia Creek before being blocked by floodwalls. The Midtown Specific Plan EIR concluded that flooding impacts at the project site would not be considered significant, because although flooding would pose an inconvenience, it would not cause a significant risk to life or property. The hydrology analysis also determined that the project site would not be subject to flood hazards associated with dam failure, seiche, tsunami, or mudflow.⁷

d. Water Quality. The quality of surface water and groundwater in the vicinity of the project site is affected by past and current land uses at the site and within the watershed and the composition of geologic materials in the vicinity.

Water quality in surface and groundwater bodies is regulated by the State and Regional Water Quality Control Boards. The project site is under the jurisdiction of the San Francisco Bay Regional Water

⁴ Khaila, Medhi, 2004. Land Development Engineer, City of Milpitas Department of Public Works, personal communication with Todd Taylor of Baseline Environmental Consulting, August 31.

⁵ Ibid.

⁶ Association of Bay Area Governments, 2004. GIS Flooding Hazards (<http://www.gis.abag.ca.gov>).

⁷ City of Milpitas, 2001. Midtown Milpitas Specific Plan Draft EIR, October 8.

Figure IV.F-1: Flood Hazards Zones Map

8x11 color

Back of Figure IV.F-1

Quality Control Board (RWQCB), which is responsible for implementation of state and federal water quality protection guidelines in the vicinity of the project site. The RWQCB implements the Water Quality Control Plan (Basin Plan),⁸ a master policy document for managing water quality issues in the region. The Basin Plan establishes beneficial water uses for waterways and water bodies within the region.

(1) Stormwater Quality. Runoff water quality is regulated by the Federal National Pollutant Discharge Elimination System (NPDES) Nonpoint Source Program (established through the Clean Water Act); the NPDES program objective is to control and reduce pollutants to water bodies from nonpoint discharges. The Program is administered by the California Regional Water Quality Control Boards. The project site would be under the jurisdiction of the San Francisco Bay RWQCB and the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP). The City of Milpitas is a participant in the SCVURPPP. The Program is a function of the County government that maintains compliance with the NPDES Stormwater Discharge Permit and promotes stormwater pollution prevention within that context. County compliance with the NPDES Permit is mandated by State and federal laws, statutes, and regulations.

Recent changes to the permit held by the SCVURPPP are detailed in RWQCB Revised Order 01-024 (NPDES Permit No. CAS029718). Revisions that potentially apply to the proposed project include Provision C.3, which specifies that significant development or redevelopment projects must include post-construction stormwater controls. A significant redevelopment project is defined as a project on a previously developed site that results in the addition or replacement of impervious surfaces that combine to a total 43,560 square feet or more.

The following excerpts from the RWQCB Revised Order 01-024 (NPDES Permit No. CAS029718) apply to the proposed project (in this case the Discharger referred to in the text would be the City of Milpitas):

- Environmental documents required for those projects that fall under CEQA or NEPA review, such as EIRs, negative declarations, and initial study checklists, shall address stormwater quality impacts during the life of the project (both significant and cumulative), required permits, and specific mitigation measures related to stormwater quality.
- Each Discharger, to the maximum extent practicable, shall require developers of projects with significant stormwater pollution potential to mitigate stormwater quality impacts, through proper site planning and design techniques and/or addition of permanent post-construction stormwater treatment control measures (“treatment controls”).
- Each Discharger shall require developers of projects that include installation of permanent structural stormwater controls to establish and provide a method for operation and maintenance of such structural controls.

⁸ San Francisco Bay Regional Water Quality Control Board, 1995, *Water Quality Control Plan*, 21 June.

In addition, projects disturbing more than one acre of land⁹ during construction are required to file a Notice of Intent (NOI) with the RWQCB to be covered under the State NPDES General Construction Permit for discharges of stormwater associated with construction activity. A developer must propose control measures that are consistent with the State General Permit. A Stormwater Pollution Prevention Plan (SWPPP) must be developed and implemented for each site covered by the general permit. A SWPPP should include Best Management Practices (BMPs) designed to reduce potential impacts to surface water quality through the construction and life of the project.

(2) Groundwater. The City is served by a municipal water system, and groundwater is not used for domestic water supply in the project area.¹⁰ Based on previous environmental investigations, shallow groundwater at the project site is slightly confined by low-permeability soils. It is generally first encountered at 10 to 16 feet below the ground surface (bgs) during subsurface investigations. If it is allowed to naturally stabilize, the groundwater elevation raises to between five and nine feet bgs.¹¹ Although specific building footprints and construction designs within the project site have not yet been determined, it is possible that groundwater may be encountered during excavation for building foundations and other improvements. Should dewatering of groundwater be required during project development, discharge of the dewatered groundwater would require a permit from SCVWD (for discharge to the sanitary sewer system) or RWQCB (for discharge to the storm sewer system).

Shallow groundwater at the project site has been affected by releases of petroleum-related compounds and solvents from historical land uses. Several parcels at the project site are currently, or have historically, been under regulatory oversight by the Santa Clara Valley Water District (SCVWD) and Santa Clara County Department of Environmental Health (SCCDEH) for the investigation and remediation of affected groundwater. Please refer to the Section IV.G, Hazards, for a discussion of local groundwater quality.

e. Local Policies and Ordinances. Policies that relate to hydrology and storm drainage that are relevant to the project site are described below.

(1) City of Milpitas General Plan. Policies in the Seismic and Safety Element and the Open Space and Environmental Conservation Element General Plan that address hydrology related issues are presented below.

- Policy 4.d-G-1: Protect and enhance the quality of water resources in the Planning Area.
- Policy 4.d-G-2: Promote conservation and efficiency in the use of water.

⁹ The State Water Resources Control Board, Water Quality Order 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES), General Permit for Stormwater Discharges Associated with Construction Activity (General Permit) states that: The regulations provide that discharges of stormwater to waters of the United States from construction projects that encompass five (5) or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit. Regulations (Phase II Rule) that became final on December 8, 1999 expand the existing NPDES program to address stormwater discharges from construction sites that disturb land equal to or greater than one (1) acre and less than five (5) acres (small construction activity). The regulations require that small construction activity, other than those regulated under an individual or Regional Water Quality Control Board General Permit, must be permitted no later than March 10, 2003.

¹⁰ City of Milpitas, 2001, Midtown Milpitas Specific Plan Draft EIR, October 8.

¹¹ Hoexter Consulting, 2004, Initial Plume Definition for Milpitas Transmission, 130 Winsor Avenue, Milpitas, California, February 13.

- Policy 4.d-I-1: Continue implementing the National Pollutant Discharge Elimination System (NPDES) requirements of the Regional Water Quality Control Board - this is implemented through Chapter 16 of the City's Zoning Ordinance.
- Policy 5.b-G-1: Minimize threat to life and property from flooding and dam inundation.
- Policy 5.b-I-1: Ensure that new construction or substantial improvements to any existing structure result in adequate protection from hazards. This includes ensuring that: new residential development within the 100-year Flood Zone locate the lowest floor, including basement, above the base flood elevation; and new non-residential development locate the lowest floor, including basement, above the base flood elevation or incorporate flood-proofing and structural requirements as spelled out in the Municipal Code.
- Policy 5.b-I-2: Require all structures located within the 100-year Flood Zone to provide proof of flood insurance at the time of sale or transfer of title.
- Policy 5.b-I-3: Ensure that encroachment into designated floodways does not result in any increase in flooding hazards.
- Policy 5.b-I-5: Seek construction of flood control channels to withstand 100-year floods along Coyote, Penitencia, Beryessa, Scott, Calera, and Los Coches Creeks.

(2) Milpitas Midtown Specific Plan. The 2002 Midtown Milpitas Specific Plan contains several policies related to hydrology:

- Policy 6.7: Provide storm drainage infrastructure to adequately serve new development and meet City standards.
- Policy 6.8: Encourage creativity in design of new development in order to reduce stormwater runoff, increase percolation, and improve water quality.
- Policy 6.9: Provide necessary improvements to the storm drainage system to serve new development within the Midtown area.

(3) City of Milpitas Municipal Code. As noted above, in General Plan Implementing Policy 4.d-I-1, NPDES requirements are implemented through Title XI, Chapter 16 of the City's Zoning Ordinance. That chapter of the Zoning Ordinance also requires that discharges must not cause any impairment in the beneficial uses or quality of water in the State as defined by the California Water Code or any special requirements of RWQCB, or interfere with the operation of any watercourses within the State. Property owners are required to provide protection from accidental discharge of prohibited materials or other wastes into any storm drain or watercourse. Stormwater pollution prevention devices are to be provided and maintained at the property owner's expense.

Other municipal code sections affecting hydrology and storm drainage include Chapter 2 of the Milpitas Sanitary Code, which prohibits discharge of any sewage, industrial waste, or other polluted waters into a storm drain or natural outlet or channel unless expressly allowed by a NPDES Permit.

2. Impacts and Mitigation Measures

This section analyzes the impacts related to hydrology and water quality that could result from implementation of the NMSD project. The subsections begin with criteria of significance, which establish the thresholds for determining whether a project impact is significant. The latter part of this section presents the potential hydrology and water quality impacts associated with the proposed project. Mitigation measures are provided as appropriate.

a. Significance Criteria. The project would have a significant effect on hydrology or water quality if it would:

- Violate any water quality standards or waste discharge requirements.
- Create or contribute runoff that would be an additional source of water quality degradation.
- Result in substantial erosion or sedimentation on- or off-site that would affect the quality of receiving water.
- Create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems and/or increase upstream or downstream flooding and require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Expose people or structures to a substantial risk of loss, injury or death involving flooding.
- Expose people or structures to a substantial risk of inundation by seiche, tsunami, extreme high tides, and/or sea level rise.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a significant net deficit in aquifer volume or a lowering of the local groundwater table level.

b. Less-than-Significant Impacts. Implementation of the proposed project would not contribute to depletion of groundwater supplies or reduce the amount or quality of water available for public water supplies. The proposed project does not propose development that would substantially alter a natural water course. The amount of impervious surfaces would not be substantially altered. As discussed above, under Flooding, existing flood hazards at the site would not be expected to result in significant risks to human health or property and are mitigated by existing federal and City programs. No risks of inundation by seiche, tsunami, extreme high tides, and/or sea level rise are present at the project site.

c. Significant Impacts. Implementation of the NMSD Project would result in two significant impacts related to hydrology and storm drainage.

Impact HYD-1: Construction activities and post-construction site uses associated with the development of each element of the NMSD Project could result in degradation of surface water quality by reducing the quality of stormwater runoff. (S)

Construction and grading within the project site would require temporary disturbance of surface soils and removal of existing impervious surfaces and vegetative cover. During the construction period, grading and excavation activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment in the runoff. Soil stockpiles and excavated parcels on the project site would be exposed to runoff and, if not managed properly, the runoff could cause erosion and increased sedimentation in water courses at or away from the project site. The accumulation of sediment could result in blockage of flows, potentially resulting in increased localized ponding or flooding.

The potential for chemical releases is present at most construction sites. Once released, substances such as fuels, oils, paints, and solvents could be transported to nearby surface waterways and/or groundwater in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters.

New construction and intensified land uses at the project site would result in increased vehicle use and potential discharge of associated pollutants. Increased numbers of vehicles at the project site will likely result in leaks of fuel or lubricants, tire wear, and fallout from exhaust, which will contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff being transported to receiving waters. Runoff from landscaped areas at the site may contain residual pesticides and nutrients. Long-term degradation of water quality runoff from the site could impact water quality in area creeks and San Francisco Bay.

Mitigation Measure HYD-1: Implementation of both of the following mitigation measures would reduce the level of significance of this impact to a less-than-significant level:

- (a) Each project proponent shall prepare a SWPPP designed to reduce potential degradation impacts to surface water quality through the construction period of the project. It is not required that the SWPPP be submitted to the RWQCB, but the SWPPP must be maintained on-site and made available to RWQCB staff upon request. The SWPPP shall include specific and detailed BMPs designed to mitigate construction-related pollutants. At minimum, BMPs shall include practices to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, paints, solvents, adhesives) with stormwater. The SWPPP shall specify properly designed centralized storage areas that keep these materials out of the rain.

An important component of the stormwater quality protection effort is the knowledge of the site supervisors and workers. To educate on-site personnel and maintain awareness of the importance of stormwater quality protection, site supervisors shall conduct regular tailgate meetings to discuss pollution prevention. The frequency of the meetings and required personnel attendance list shall be specified in the SWPPP.

BMPs designed to reduce erosion of exposed soil may include, but are not limited to: soil stabilization controls, watering for dust control, perimeter silt fences, placement of hay bales, and sediment basins. The potential for erosion is generally increased if grading is performed during the rainy season as disturbed soil can be exposed to rainfall and storm runoff. If grading must be conducted during the rainy season, the primary BMPs selected shall focus on erosion control, that is, keeping sediment on the site. End-of-pipe sediment control measures (e.g., basins and traps) shall be used only as secondary measures. If hydroseeding is selected as the primary soil stabilization method, then these areas shall be seeded by September 1 and irrigated as necessary to ensure that adequate root development has occurred prior to October 1. Entry and egress from the construction site shall be carefully controlled to minimize off-site tracking of sediment. Vehicle and equipment wash-down facilities shall be designed to be accessible and functional during both dry and wet conditions.

- (b) Post-construction, the City shall ensure that design of each project element includes features and operational Best Management Practices to reduce potential impacts to surface water quality associated with operation of the project to the best extent practicable. These features shall be included in the drainage plan and final development drawings for each project element. Specifically, the final design may include measures designed to mitigate potential water quality degradation of runoff from all portions of the completed development. In general, passive, low-maintenance BMPs (e.g., grassy swales, porous pavements) are preferred over active filtering or treatment systems. If the design includes higher maintenance BMPs (e.g., sedimentation basins, hydrocarbon interceptors), then a maintenance plan shall be developed and implemented to inspect and maintain these features.

The NMSD Projects shall comply with the C3 provisions of the City of Milpitas NPDES Permit. These projects may be eligible for a partial waiver under the City's Stormwater C.3 waiver program.

The City of Milpitas shall ensure that the SWPPP and drainage plan are prepared and adequate prior to approval of the grading plan. (LTS)

Impact HYD-2: Implementation of the NMSD Project could exacerbate existing drainage and localized flooding problems. (S)

The project site is serviced by an undersized storm drainage system, which allows nuisance flooding to occur during the 10-year storm event. Additional stormwater runoff to this system in its current condition would likely result in increased localized flooding problems, absent storm drainage improvements. Based on preliminary discussion with City staff, it is likely that improvements to the storm drain system may be required to adequately serve the proposed project.¹²

Most of the western portion of the project site, west of North Main Street, is currently vegetated and vacant, so much of the current stormwater drainage would be expected to be absorbed by site soils. A large portion of these vegetated areas would be covered by building foundations and pavement as a result of project improvements.

The eastern portion of the project site, east of North Main Street, is already largely covered with impervious surfaces. However, it is expected that capacity problems could increase at drainage inlets (if not properly designed) even in the eastern portion of the project site because proposed improvements would improve efficiency in the delivery of storm runoff to these inlets. Under existing conditions, there are many depressed and/or poorly drained areas where ponding may occur and water can be temporarily stored on-site.

Mitigation Measure HYD-2: The City shall retain a qualified engineer to prepare a drainage plan for the proposed project improvements in accordance with the City's general Conditions of Approval requirements. As a condition of approval of the final grading and drainage plans for each element of the NMSD Project, it must be demonstrated that implementation of the proposed drainage plans would not exceed the capacity of project area drainage facilities. A

¹² Khaila, Medhi, 2004, Land Development Engineer, Public Works Department, City of Milpitas, personal communication with Todd Taylor of Baseline Environmental Consulting, August 31.

storm drain maintenance plan that includes annual inspections of any bioswales, sedimentation basins, drainage ditches, and drainage inlets, and prompt removals of sediments and debris, as necessary, shall be submitted with the drainage plan.

The grading and drainage plans shall be reviewed for compliance with these requirements by the City of Milpitas. Any improvements to the storm drainage system deemed necessary by the City will be incorporated into the conditions of approval for each individual project. (LTS)

